SEQUENCE LISTING

```
<110> Agriculture and Agri-Food Canada; The University of Saskatchewan
<120> Cyclin Dependant Kinase Inhibitors as Plant Growth
      Regulators
<130> 81601-3
<140>
<141>
<150> CA 2,256,121
<151> 1998-12-31
<160> 16
<170> PatentIn Ver. 2.0
<210> 1
<211> 904
<212> DNA
<213> Arabidopsis thaliana
<220>
<221> CDS
<222> (55)..(627)
<220>
<221> intron
<222> (252)..(253)
<220>
<221> intron
<222> (296)..(297)
<220>
<221> intron
<222> (563)..(564)
<400> 1
atttctctct ctcacagaga ttgtaacttc acgcacacgt aacctaaatc gaag atg
                                                                    57
                                                             Met
gtg aga aaa tat aga aaa gct aaa gga att gta gaa gct gga gtt tcg
                                                                    105
Val Arg Lys Tyr Arg Lys Ala Lys Gly Ile Val Glu Ala Gly Val Ser
                                  10
tca acg tat atg cag cta cgg agc cgg aga att gtt tat gtt aga tcg
                                                                    153
Ser Thr Tyr Met Gln Leu Arg Ser Arg Arg Ile Val Tyr Val Arg Ser
         20
                                                                    201
gaa aaa tca agc tct gtc tcc gtc gtc ggt gat aat gga gtt tcg tcg
Glu Lys Ser Ser Ser Val Ser Val Val Gly Asp Asn Gly Val Ser Ser
tct tgt agt gga agc aat gaa tat aag aag aaa gaa tta ata cat ctg
                                                                    249
Ser Cys Ser Gly Ser Asn Glu Tyr Lys Lys Lys Glu Leu Ile His Leu
 50
                     55
                                          60
```

														cga Arg 80		297
														aaa Lys		345
														tcg Ser		393
														atg Met		441
														acg Thr		489
														gag Glu 160		537
														gag Glu		585
							tac Tyr 185									627
tgaa	agaac	gaa g	gaaga	agtt	t at	ggtt	tttt	ttt	taac	ettt	ttaç	gattt	ta a	atatt	tcagg	687
gaat	aagt	ta a	atttt	attt	t gt	tgat	ttgg	g aaa	atata	aga	tttg	gtago	gag ç	gaato	gttttt	747
agaagtacga aattgcacag aaaaagaaga aagcttttta acagatttta gagcccagaa											ccagaa	807				
aagtcgtgtc ttttagctct acttttacct cttcttcgaa tcttgtgtat cttttagcat											867					
attetttagt acatttttat gtttttggtg actgata											904					

<210> 2

<211> 191

<212> PRT

<213> Arabidopsis thaliana

<400> 2

Met Val Arg Lys Tyr Arg Lys Ala Lys Gly Ile Val Glu Ala Gly Val 1 5 10 15

Ser Ser Thr Tyr Met Gln Leu Arg Ser Arg Arg Ile Val Tyr Val Arg 20 25 30

Ser Glu Lys Ser Ser Ser Val Ser Val Val Gly Asp Asn Gly Val Ser 35 40 45

Ser Ser Cys Ser Gly Ser Asn Glu Tyr Lys Lys Lys Glu Leu Ile His 50 60



Leu Glu Glu Glu Asp Lys Asp Gly Asp Thr Glu Thr Ser Thr Tyr Arg 65 70 75 80

Arg Val Thr Lys Arg Lys Leu Phe Glu Asn Leu Arg Glu Glu Lys 85 90 95

Glu Glu Leu Ser Lys Ser Met Glu Asn Tyr Ser Ser Glu Phe Glu Ser 100 105 110

Ala Val Lys Glu Ser Leu Asp Cys Cys Cys Ser Gly Arg Lys Thr Met 115 120 125

Glu Glu Thr Val Thr Ala Glu Glu Glu Lys Ala Lys Leu Met Thr 130 135 140

Glu Met Pro Thr Glu Ser Glu Ile Glu Asp Phe Phe Val Glu Ala Glu 145 150 155 160

Lys Gln Leu Lys Glu Lys Phe Lys Lys Lys Tyr Asn Phe Asp Phe Glu 165 170 175

Lys Glu Lys Pro Leu Glu Gly Arg Tyr Glu Trp Val Lys Leu Glu 180 185 190

<210> 3

<211> 660

<212> DNA

<213> Arabidopsis thaliana

<400> 3

acgtatatgc agctacggag ccggagaatt gtttatgtta gatcggaaaa atcaagctct 60 gtctccgtcg tcggtgataa tggagtttcg tcgtcttgta gtggaagcaa tgaatataag 120 aagaaagaat taatacatct ggaggaggaa gataaagatg gtgacactga aacgtcgacg 180 tatcgacggg gtacgaagag gaagctttt gaaaatctga gaggaggag gaaagaagaa 240 ttaagtaaat ccatggagaa ttattcatcg gaatttgaat cggcggttaa agaatcgtta 300 gattgttgt gtagcggag gaaaacgatg gaggagaacgg tgacggcgga ggaggaggag 360 aaggcgaaat tgatgacga gatgccaacg gaatcggaaa ttgaagattt ttttgtggaa 420 gctgagaaac aactcaaaga aaaattcaag aagaagtaca atttcgattt cgagaaggag 480 aagccattag aaggacgtta cgaatgggta aagttagagt gaagaagaag aagaagttta 540 tggttttt tttaacttt tagatttaa tatttcaggg aataagttaa ttttattttg 600 ttgatttgga aatataagat ttgtaggagg aatgtttta gaagtacgaa attgcacaga 660

<210> 4

<211> 443

<212> DNA

<213> Arabidopsis thaliana

<400> 4

acgtatatgc agctacggag ccggagaatt gtttatgtta gatcggaaaa atcaagctct 60

gtctccgtcg	tcggtgataa	tggagaatta	ttcatcggaa	tttgaatcgg	cggttaaaga	120
atcgttagat	tgttgttgta	gcgggaggaa	aacgatggag	gagacggtga	cggcggagga	180
ggaggagaag	gcgaaattga	tgacggagat	gccaacggaa	tcggaaattg	aagattttt	240
tgtggaagct	gagaaacaac	tcaaagaaaa	attcaagaag	aagtacaatt	tcgatttcga	300
gaaggagaag	ccattagaag	gacgttacga	atgggtaaag	ttagagtgaa	gaagaagaag	360
aagtttatgg	tttttttt	aactttttag	attttaatat	ttcagggaat	aagttaattt	420
tattttgttg	atttggaaat	ata				443

<210> 5

<211> 377

<212> DNA

<213> Arabidopsis thaliana

<400> 5

gagttattt aggggtacga agaggaagct ttttgaaaat ctgagagag aggagaaaga 60 agaattaagt aaatccatgg agaattattc atcggaattt gaatcggcgg ttaaagaatc 120 gttagattgt tgttgtagcg ggaggaaaac gatggaggag gaggaggaga aggcgaaatt 180 gatgacggag atgccaacgg aatcggaaat tgaagatttt tttgtggaag ctgagaaaca 240 actcaaagaa aaattcaaga agaagtacaa tttcgatttc gagaaggaga agccattaga 300 aggacgttac gaatgggtaa agttagagtg aagaagaaga agaagtttat ggttttttt 360 ttaacttttt agatttt

<210> 6

<211> 755

<212> DNA

<213> Arabidopsis thaliana

<400> 6

gtggaatcta ggataattet gteteegtgt gtacaggega egaategegg tggaattgt 60 gegagaaatt cageaggage gteggagaeg agtgttgtta tagtacgaeg gegagattet 120 ceteeggttg aagaacagtg teaaategaa gaagaagatt egteggttte gtgttgttet 180 acateggaag agaaategaa aeggagaate gaatttgtag atettgagga aaataaeggt 240 gaegategtg aaacagaaae gtegtggatt taegatgat tgaataagag tgaggaateg 300 atgaacatgg attettete ggtggetgtt gaagatgtag agtetegeeg eaggttaagg 360 aagagtetee atgagaeggt gaaggaaget gagttagaag aetttttea ggtggeggag 420 aaagatette ggaataagtt gttggaatgt tetatgaagt ataaettega tttegagaaa 480 gatgageeae ttggtggagg aagataegag tgggttaaat tgaatecatg aagaagaega 540

tgatgataat gatgatcatt gttttcacca aagtacttat tatttctctt ctgtaataat 600 ctttgctttg attttcttt taacaaaatc caaatgtaga tatctttctc tcgaataatc 660 aataacatgt aattcaactt ttgtttgtac ttccttgagg taattaatta gattcgtgtt 720 tttctcgatt aataaactat aagtttataa ctaaa 755

<210> 7 <211> 824

<212> DNA

<213> Arabidopsis thaliana

<400> 7

<210> 8 <211> 642

<212> DNA

<213> Arabidopsis thaliana

<400> 8

ctctctccag agaaactat aatgagettg agagaaatga gegaaacaaa acccaagaga 60 gattetgagt acgaaggate aaacatcaag aggatgagae tegatgatga tgatgaegtt 120 ttacgetcae egacgagaae tetttettet tetteetett ettetetgge ttacteggtt 180 teagatteeg gaggttetg etcegtegeg ttatetgaag aagaagaega teatetaage 240 teaageatea getetggttg tteeageage gaaactaaeg aaategetae tegtetteea 300 tttteagate tggaggetea tgaaatetee gaaacegaaa teteaaegtt acteaceae 360

aatttcagga aacagggaat ttcatcaagc gagaatctgg gagaaacagc agaaatggac 420 tcggcgacga cggagatgag agatcagaga aagacggaga agaagaagaa gatggaaaaa 480 tcaccgacgc aggcagagct tgatgacttt ttctcggcgg cggagagata cgaacagaaa 540 cgattcacag aaaagtacaa ctacgacatc gtcaatgata cgccgcttga aggtcggtac 600 cagtgggtta gtctgaaacc ttagaagcca tggaagaaca aa 642

<210> 9

<211> 533

<212> DNA

<213> Arabidopsis thaliana

<400> 9

attaaagagt ctggttccag gtctcgcgtt gactcggtta actcggctcc tgtagctcag 60 agctctaatg aagatgaatg ttttgacaat ttcgtgagtg tccaagtttc ttgtggtgaa 120 aacagtctcg gttttgaatc aagacacagc acaagggaga gcacgccttg taactttgtt 180 gaggatatgg agatcatggt tacaccaggg tctagcacga ggtcgatgtg cagagcaacc 240 aaagagtaca caagggaaca agataacgtg atcccgacca ctagtgaaat ggaggagttc 300 tttgcatatg cagagcagca gcaacagagg ctattcatgg agaagtacaa cttcgacatt 360 gtgaatgata tccccctcag cggacgttac gaatgggtgc aagtcaaacc atgaagttca 420 aaaggaaaca gctccaaaag acatggtgt aagttagaga attgtgatgg agtttaacag 480 aactaaccaa acatcagaaa tcgtgttaat ccttaagtta ataatgtggg tta 533

<210> 10

<211> 191

<212> PRT

<213> Arabidopsis thaliana

<400> 10

Met Val Arg Lys Tyr Arg Lys Ala Lys Gly Ile Val Glu Ala Gly Val 1 5 10 15

Ser Ser Thr Tyr Met Gln Leu Arg Ser Arg Arg Ile Val Tyr Val Arg 20 25 30

Ser Glu Lys Ser Ser Ser Val Ser Val Gly Asp Asn Gly Val Ser 35 40 45

Ser Ser Cys Ser Gly Ser Asn Glu Tyr Lys Lys Glu Leu Ile His
50 55 60

Leu Glu Glu Glu Asp Lys Asp Gly Asp Thr Glu Thr Ser Thr Tyr Arg 65 70 75 80

Arg Gly Thr Lys Arg Lys Leu Cys Glu Asn Leu Arg Glu Glu Lys 85 90 95 Glu Glu Leu Ser Lys Ser Met Glu Asn Tyr Ser Ser Glu Phe Glu Ser

Ala Val Lys Glu Ser Leu Asp Cys Cys Cys Ser Gly Arg Lys Thr Met 115 120 125

Glu Glu Thr Val Thr Ala Glu Glu Glu Lys Ala Lys Leu Met Thr 130 135 140

Glu Met Pro Thr Glu Ser Glu Ile Glu Asp Phe Phe Val Glu Ala Glu 145 150 155 160

Lys Gln Leu Lys Glu Lys Phe Lys Lys Lys Tyr Asn Phe Asp Phe Glu 165 170 175

Lys Glu Lys Pro Leu Glu Gly Arg Tyr Glu Trp Val Lys Leu Glu 180 185 190

<210> 11

<211> 176

<212> PRT

<213> Arabidopsis thaliana

<400> 11

Val Glu Ser Arg Ile Ile Leu Ser Pro Cys Val Gln Ala Thr Asn Arg 1 5 10 15

Gly Gly Ile Val Ala Arg Asn Ser Ala Gly Ala Ser Glu Thr Ser Val 20 25 30

Val Ile Val Arg Arg Arg Asp Ser Pro Pro Val Glu Glu Gln Cys Gln
35 40 45

Ile Glu Glu Glu Asp Ser Ser Val Ser Cys Cys Ser Thr Ser Glu Glu 50 55 60

Lys Ser Lys Arg Arg Ile Glu Phe Val Asp Leu Glu Glu Asn Asn Gly 65 70 75 80

Asp Asp Arg Glu Thr Glu Thr Ser Trp Ile Tyr Asp Asp Leu Asn Lys
85 90 95

Ser Glu Glu Ser Met Asn Met Asp Ser Ser Ser Val Ala Val Glu Asp 100 105 110 '

Val Glu Ser Arg Arg Leu Arg Lys Ser Leu His Glu Thr Val Lys 115 120 125

Glu Ala Glu Leu Glu Asp Phe Phe Gln Val Ala Glu Lys Asp Leu Arg 130 135 140

Asn Lys Leu Leu Glu Cys Ser Met Lys Tyr Asn Phe Asp Phe Glu Lys 145 150 155 160

Asp Glu Pro Leu Gly Gly Gly Arg Tyr Glu Trp Val Lys Leu Asn Pro 165 170 175

<210> 12

<211> 212

<212> PRT

<213> Arabidopsis thaliana

<400> 12

Lys Lys Lys Gln Arg Glu Arg Ala His Lys Asn Pro Arg Glu Lys Lys 1 5 10 15

Met Ser Glu Arg Lys Arg Glu Leu Ala Glu Glu Ala Ser Ser Thr Ser 20 25 30

Phe Ser Pro Leu Lys Lys Thr Lys Leu Asn Asp Ser Ser Asp Ser Ser 35 40 45

Pro Asp Ser His Asp Val Ile Val Phe Ala Val Ser Ser Ser Val 50 55 60

Ala Ser Ser Ala Ala Leu Ala Ser Asp Glu Cys Ser Val Thr Ile Gly 65 70 75 80

Gly Glu Glu Ser Asp Gln Ser Ser Ser Ile Ser Ser Gly Cys Phe Thr 85 90 95

Ser Glu Ser Lys Glu Ile Ala Lys Asn Ser Ser Ser Phe Gly Val Asp 100 105 110

Leu Glu Asp His Gln Ile Glu Thr Glu Thr Glu Thr Ser Thr Phe Ile 115 120 125

Thr Ser Asn Phe Arg Lys Glu Thr Ser Pro Val Ser Glu Gly Leu Gly 130 135 140

Glu Thr Thr Glu Met Glu Ser Ser Ser Ala Thr Lys Arg Lys Gln 145 150 155 160

Pro Gly Val Arg Lys Thr Pro Thr Ala Ala Glu Ile Glu Asp Leu Phe 165 170 175

Ser Glu Leu Glu Ser Gln Asp Asp Lys Lys Lys Gln Phe Ile Glu Lys 180 185 190

Tyr Asn Phe Asp Ile Val Asn Asp Glu Pro Leu Glu Gly Arg Tyr Lys 195 200 205

Trp Asp Arg Leu 210

<210> 13

<211> 208

<212> PRT

<213> Arabidopsis thaliana

<400> 13

Leu Ser Pro Glu Lys Thr Ile Met Ser Leu Arg Glu Met Ser Glu Thr 1 5 10 15

Lys Pro Lys Arg Asp Ser Glu Tyr Glu Gly Ser Asn Ile Lys Arg Met 20 25 30

Arg Leu Asp Asp Asp Asp Val Leu Arg Ser Pro Thr Arg Thr Leu 35 40 45

Ser Ser Ser Ser Ser Ser Leu Ala Tyr Ser Val Ser Asp Ser Gly
50 55 60

Gly Phe Cys Ser Val Ala Leu Ser Glu Glu Glu Asp Asp His Leu Ser 65 70 75 80

Ser Ser Ile Ser Ser Gly Cys Ser Ser Ser Glu Thr Asn Glu Ile Ala 85 90 95

Thr Arg Leu Pro Phe Ser Asp Leu Glu Ala His Glu Ile Ser Glu Thr 100 105 110

Glu Ile Ser Thr Leu Leu Thr Asn Asn Phe Arg Lys Gln Gly Ile Ser 115 120 125

Ser Ser Glu Asn Leu Gly Glu Thr Ala Glu Met Asp Ser Ala Thr Thr 130 135 140

Glu Met Arg Asp Gln Arg Lys Thr Glu Lys Lys Lys Lys Met Glu Lys 145 150 . 155 160

Ser Pro Thr Gln Ala Glu Leu Asp Asp Phe Phe Ser Ala Ala Glu 165 170 175

Arg Tyr Glu Gln Lys Arg Phe Thr Glu Lys Tyr Asn Tyr Asp Ile Val 180 185 190

Asn Asp Thr Pro Leu Glu Gly Arg Tyr Gln Trp Val Ser Leu Lys Pro 195 200 205

<210> 14

<211> 137

<212> PRT

<213> Arabidopsis thaliana

<400> 14

Pro Val Ala Gln Ser Ser Asn Glu Asp Glu Cys Phe Asp Asn Phe Val 20 25 30

Ser Val Gln Val Ser Cys Gly Glu Asn Ser Leu Gly Phe Glu Ser Arg 35 40 45

His Ser Thr Arg Glu Ser Thr Pro Cys Asn Phe Val Glu Asp Met Glu
50 55 60

Ile Met Val Thr Pro Gly Ser Ser Thr Arg Ser Met Cys Arg Ala Thr 65 70 75 80

Lys Glu Tyr Thr Arg Glu Gln Asp Asn Val Ile Pro Thr Thr Ser Glu 85 90 95

Met Glu Glu Phe Phe Ala Tyr Ala Glu Gln Gln Gln Arg Leu Phe 100 105 110

Met Glu Lys Tyr Asn Phe Asp Ile Val Asn Asp Ile Pro Leu Ser Gly 115 120 125

Arg Tyr Glu Trp Val Gln Val Lys Pro 130 135

<210> 15

<211> 804

<212> DNA

<213> Chenopodium rubrum

<400> 15

geacgagega aattgeggtg gtaggagtta aaaccagage tegagactge cetagetatg 60 geggcagetg ctactceaac ttegteteeg gegaagaaga teaagaaggt ttegaagteg 120 tegtataata tteeteaact aagaagtegt egaaagaatt tgteggegee ggagaattte 180 geeggaattag aaacgaegee gttggaagtt geggeggttg ttggagggag agaggttgeg 240 aattgetega gtaggegggt aattactaca getaggtegg attteegee gtettgttge 300 teaageaatt atgateagtt gagttetage gagecagaag tagttaagga tgatgatggt 360 ttgggaaatte gtacageaga teeagaggtt gagagtggtg aggegtegte aaagcaaaag 420 gagagecata gaacagaage gagagaaget acaaaattag acgaceagga ttateeggeg 480 acgaaatcaa eggtacagat caagatgeeg tetgatteag aaateegaaga attetteget 540 gttgetgaaa aagateteea gaaacgette agegaaaagt acaatteega catagttaag 600 gaegtgeeac tgaaaggteg atgatgatg atgatgatga atgategaat tetteeacaa ttacgeeaaa attageeac 720 gaaattgeaa agtaaatett taattttage ettteette tttttageag aagttgatet 780 atteeteaca egaaaaaaaa aaaa

<210> 16

<211> 196

<212> PRT

<213> Chenopodium rubrum

<400> 16

Met Ala Ala Ala Thr Pro Thr Ser Ser Pro Ala Lys Lys Ile Lys
1 10 15

Lys Val Ser Lys Ser Ser Tyr Asn Ile Pro Gln Leu Arg Ser Arg Arg
20 25 30

Lys Asn Leu Ser Ala Pro Glu Asn Phe Ala Glu Leu Glu Thr Thr Pro 35 40 45





Leu Glu Val Ala Ala Val Val Glu Glu Glu Val Ala Asn Cys Ser

Ser Ser Glu Val Ile Thr Thr Ala Arg Ser Asp Phe Pro Pro Ser Cys
65 70 75 80

Cys Ser Ser Asn Tyr Asp Gln Leu Ser Ser Ser Glu Pro Glu Val Val 85 90 95

Lys Asp Asp Gly Leu Gly Asn Arg Thr Ala Asp Pro Glu Val Glu 100 105 110

Ser Gly Glu Ala Ser Ser Lys Gln Lys Glu Ser His Arg Thr Glu Ala 115 120 125

Arg Glu Ala Thr Lys Leu Asp Asp Gln Asp Tyr Pro Ala Thr Lys Ser 130 135 140

Thr Val Gln Ile Lys Met Pro Ser Asp Ser Glu Ile Glu Glu Phe Phe 145 150 155 160

Ala Val Ala Glu Lys Asp Leu Gln Lys Arg Phe Ser Glu Lys Tyr Asn 165 170 175

Phe Asp Ile Val Lys Asp Val Pro Leu Lys Gly Arg Tyr Asp Trp Val 180 185 190

Pro Ile Asn Pro 195